

6.0 POST AUTHORIZATION SUMMARY

6.1 DESCRIPTION OF AUTHORIZED HWRP

Three parcels are included in the authorized project. They are the HAAF (644 acres), SLC (319 acres) and Navy Ball Fields (18 acres) parcels. These three parcels comprise the project area under the No Action plan.

6.1.1 Hamilton Army Air Field

The 644-acre airfield parcel lies on what was historically tidal marsh. Since being diked off in the early 20th century, the site has subsided to an average elevation of -5 feet NGVD. The airfield is protected from tidal inundation by a bayfront levee. The parcel would be acquired by the sponsor from the Army through the BRAC process. This parcel is an ideal candidate for tidal wetland restoration and is authorized.

6.1.2 Navy Ball Fields

The 18-acre Navy ballfield parcel abuts the airfield parcel at its southwestern corner. The parcel lies directly adjacent to a hillside (Long Point). Incorporation of this parcel in the restoration project would allow the use of the existing topography in the design. The levee would be tied into the hill, reducing the length of the levee required, thereby reducing the cost of the project. In addition, use of a natural border for the wetland would enhance the restoration by providing transitional habitat, and high tide refugia for marsh species that levee slopes do not provide. This parcel currently drains to the airfield. If this parcel were not included in the project, and a levee were to separate it from the airfield, it would be necessary to pump runoff over the levee in order to prevent ponding. This would incur an additional cost to the project. The Feasibility Report for HWRP states that the State Coastal Conservancy (SCC), who is the non-Federal sponsor (NFS), was to acquire the Navy Ball Fields property through a Public Benefit Conveyance (PBC) from the Navy. The Ball Fields are referred to as Ball Fields 3 and 4. The Navy is still awaiting the ROD to see what remedial action is needed for cleanup of this property prior to the PBC to the SCC. However, recently approximately two acres of these Ball Fields that are located south of the levee were assigned to the Department of Interior and subsequently quitclaimed to the City of Novato. The SCC will have to acquire fee title to a .69-acre of the portion of the Ball Fields that was quitclaimed to the City of Novato if these lands are to be included in the HWRP design.

6.1.3 State Land Commission Property

Formerly the Hamilton Antenna Field, this 319-acre parcel abuts the northeastern portion of the airfield and lies along the bayfront. Like the airfield, this area is historic tidal marsh. This parcel also has subsided significantly since being diked off. This parcel was transferred to the SLC during base closure. SLC is severely restricted under State law in transferring fee title of lands that they hold in public trust, and while under SLC

management and jurisdiction the parcel is subject to being outgranted for other (non-Project) uses, as long as that other use is consistent with the public trust. The standard estate for a wetlands restoration project is fee. The SLC is authorized to offer, under its own discretion, a lease to the SCC of up to 49 years; such a limited-term lease is unacceptable because it would not provide sufficient interest in the property to support the integrity of the Federal cost-shared project. The SLC could conceivably transfer fee title to the SCC via a legislative grant, but such a grant would be accomplished only at the discretion of the California legislature and, in any event, it would be incompatible with the plans of the parties, because the SLC would be effectively precluded from transferring fee title to the parcel to a public entity that would subsequently assume Project real property ownership and OMRR&R obligations, as the SCC intends to do. The following options, in lieu of the customary fee title estate that the non-Federal sponsor would normally be required to provide, have been researched and reviewed, and appear at this time as the most viable in resolving the real property interest requirements of the project while preserving the opportunity for the non-Federal sponsor to transfer its interests and responsibilities to a third party in the future: (1) the Federal Government would enter into condemnation proceedings to acquire this parcel at a later date when the property is required for construction, and would hold the parcel in federal ownership under the management of the Corps until the SCC arranges with a willing public entity an assumption of both OMRR&R responsibilities and ownership over the Project, at which time the federal title would be further transferred to that third party entity; or (2) a combination of all of the following: a 49-year lease from the SLC to the SCC and its successors, a single renewal of this initial lease at the option of the SCC or its successor (which the SCC or its successor will be required under the OMRR&R obligations to exercise), and listing of the SLC property on the California Significant Lands Inventory so as to preserve the property for uses fully consistent with Project purposes. These options have been discussed with the non-Federal sponsor and with SLC representatives, who have acknowledged the requirements and parameters of each option. Selection will be made from among all the available alternatives for resolution of the real property interest requirements of the project, at the time that the SLC parcel has been placed in a condition suitable for project implementation.

Antenna installations and associated cables are present on the SLC site. Other facilities on that site include aboveground fuel tanks, transformers, target practice ranges, and burn pits. These facilities are presently being investigated under the Formerly Utilized Defense Sites (FUDS) program prior to implementation of the wetland restoration project, and any remediation required to make the parcel suitable for ecosystem restoration purposes would be accomplished under the FUDS program prior to sediment placement.

6.1.4 Land Use

The Hamilton Wetlands Restoration project site was historically dominated by tidal salt marsh habitat but was converted to agricultural land in the late 1800s. In 1931 funds were appropriated for the construction of Hamilton Army Airfield, which was in operation until 1974. Currently the site consists of grasslands, seasonal and tidal

wetlands, and developed areas. The only remaining salt marsh in the project area is outboard of the levee that defines the developed portions of both the HAAF and SLC sites. Although the habitats present throughout most of the project site area are structurally simple (i.e., lacking the vertical structure that would be provided by trees and shrubs), a moderately large number of vertebrate species are present in this area, including some special-status species; however, relatively few species of reptiles and amphibians are present. Bird diversity is quite high, but the number of birds using the project site is limited. Species present include ducks, shorebirds, wading birds, passerines (perching, mainly song birds), and many species of raptors (birds of prey) that forage across the entire site.

Developed Areas

284 acres of the project site are developed areas consisting of concrete, asphalt, buildings, and bare ground. These areas provide minimal habitat for wildlife. The buildings were surveyed in 1997 for use by special-status bat species and none were present.

The developed areas of the parcel include a 6,000-foot runway, aprons, taxiways, an aircraft dispersal area, and twelve associated small outbuildings. The hangar is being removed as part of the Base Realignment and Closure Act (BRAC) process, while the remaining buildings will be demolished and removed by this project prior to restoration. In addition, a six-inch diameter fuel pipeline, formerly used to supply storage tanks that were present on the site, transects the airfield and extends 18,000 feet into the bay. This pipeline has been closed. The pipeline portion lying on upland area has been removed and the remaining portion lying in the bay has been abandoned in place.

A perimeter drainage ditch runs along much of the property line of the HWRP site. The ditch is classified as a jurisdictional water of the United States. Subdrainage pipes in three areas of the HWRP site discharge to the perimeter drainage ditch were installed to assist in lowering the water table. Three pump stations near the northeastern corner of the HWRP site discharge drainage from the perimeter ditch to a channel in the outboard tidal marsh. Power supply lines to the pump stations run along the outboard levee from the south. Drainage outlets from adjacent properties also lead into HWRP's perimeter drainage system.

A wetland mitigation site exists at the northern end of the runway. The 12.4-acre mitigation site was constructed to replace seasonal wetland losses resulting from Landfill 26 closure activities. The mitigation wetland is predominantly emergent marsh dominated by cattail, tules, and shallow open water. The existing wetlands at the HAAF and SLC parcels are described in more detail below.

A U.S. Army Corps of Engineers (USACE) certified wetland jurisdictional delineation of 87 acres on the HAAF site is in effect until February 23, 1999. A wetland delineation, identifying 16 acres of jurisdictional waters of the United States, was performed in January 1998 on the interior portions of the SLC site. The functions and values of the site are identified as part of a Habitat Evaluation Procedure conducted by the U.S. Fish and Wildlife Service (FWS).

Seasonal and Tidal Wetlands

The HAAF and SLC parcels contain both seasonal wetlands and tidal wetlands (coastal salt marsh and brackish marsh). The majority of the marsh at the HAAF and SLC parcels is high pickleweed marsh outboard of the perimeter levee. The total wetland acreage at the combined HAAF and SLC parcels is 159.5 acres.

Tidal Marsh

The project site includes 120 acres of high pickleweed marsh. There are 88 acres outboard of the developed portion of the HAAF site. Of this acreage, 66.3 acres are within the HAAF site boundary and the additional 32 acres are outboard of the SLC site. The pickleweed dominated tidal salt marsh along San Pablo Bay provides habitat for a number of bird species, including several special status species, dependent on such habitats, such as the California clapper rail. Shorebirds, generally present during winter as well as spring and fall migration, feed on mudflats at low tide or around the marshes adjacent to ponds and sloughs. Some water birds occur in both fresh water and saline wetlands, including dabbling ducks and wading birds. Although no surveys for the salt marsh harvest mouse have been conducted, it is likely that the tidal marsh supports a population of the mouse, and this study assumes that the species is present.

Seasonal Wetland

There are 35.5 acres of seasonal wetland on the HAAF project site. A total of 19.5 acres are on the HAAF site (including the 12.4-acre Landfill 26 wetland mitigation site) and 16 acres are on the SLC site. The dominant seasonal wetland species at the HAAF site are salt grass and alkali heath (*Frankenia salina*). Common wetland plant species on the SLC site include cattail (*Typha* spp.), salt marsh bulrush (*Scirpus maritimus*), and curly dock (*Rumex crispus*). Seasonal wetlands commonly provide high tide refugia (resting areas during high tide) for shorebirds. In addition, the aquatic invertebrates that inhabit the seasonal wetland pools provide forage for shorebirds.

Brackish Marsh

Cattail and bulrush colonize a total of 4 acres of marshy sections along the perimeter drainage ditch. Common species in the perimeter drainage ditch include threespine stickleback (*Gasterosteus aculeatus*), mosquito fish (*Gambusia affinis*), and red-winged blackbirds.

Grassland

259 acres of the HAAF site (mostly in the revetment area) and nearly the entire SLC site are grassland. This habitat is dominated by ruderal (weedy) upland plants such as bristly ox-tongue (*Picris echioides*), yellow star thistle (*Centaurea solstitialis*), wild radish (*Raphanus sativa*), and curly dock (*Rumex crispus*). Additionally, non-native grasses such as Mediterranean barley (*Hordeum marinum*) and perennial ryegrass (*Lolium perenne*) are common throughout the project site. Grassland and ruderal vegetation around the project site supports relatively few bird species except where coyote bush (*Baccharis pilularis consanguinea*), blackberry (*Rubus* spp.), or patches of dense, tall herbaceous vegetation are present.

6.1.5 Special Status Species at HWRP

Table 6-1 lists the special-status wildlife species known to occur within the authorized HWRP project site. A complete list of potential special-status species is contained in the 1998 Hamilton Wetland Restoration Plan EIS. Four of the seven species utilize wetland habitat and two of the raptors forage in wetlands and grassland. A survey was conducted for special-status plant species and none were identified (USACE, 1996). No trapping has been conducted to determine the presence of the salt marsh harvest mouse; however, the study assumes that the mouse is present in the existing pickleweed marsh.

Table 6-1 Special Status Species Observed at Hamilton Army Airfield

Common and Latin Name	Status	Habitat
California clapper rail (<i>Rallus longirostris obsoletus</i>)	State and federal endangered	Cordgrass marsh, tidal sloughs
California black rail (<i>Laterallus jamicensis coturniculus</i>)	State threatened	Pickleweed marsh and grasses at edge of marsh
San Pablo song sparrow (<i>Melospiza melodia samuelis</i>)	State species of special concern	Tidal marsh
Salt marsh common yellowthroat (<i>Geothlypis trichas sinuosa</i>)	State species of special concern	Salt marsh and fresh water emergent marsh
Northern harrier (<i>Circus cyaneus</i>)	State species of special concern	Marshes and grasslands for foraging
Short-eared owl (<i>Asio flammeus</i>)	State species of special concern	Marshes and grasslands for foraging
Burrowing owl (<i>Spermophilus beecheyi</i>)	State species of special concern	Grassland with ground squirrel burrows

6.1.6 HTRW

The Hamilton Army Airfield has been in the Base closure process since 1974. Military uses of the property resulted in contamination with a number of substances, including relatively low levels of petroleum hydrocarbons, volatile and semi-volatile compounds, polychlorinated biphenyls, herbicides, pesticides and metals. Soils contaminated by Army activities on the HAAF parcel are concentrated around underground storage tanks (USTs), above ground storage tanks (ASTs), an aircraft maintenance facility, transformer and generator sites, a former sewage treatment plant, two burn pits, perimeter drainage ditch sediments, and coastal marsh sediments. A more detailed discussion of site contamination is provided in Chapter 10 of the HWRP EIS/R. This property was included in BRAC 1988. The U.S. Army is implementing a remediation program under the BRAC process to restore the airfield to a condition protective of human health and the environment for reuse as a wetland area, and is further coordinating its remediation technical studies with the State's efforts to restore a valuable wetlands ecosystem. The BRAC program's cleanup goals will be accomplished, in part, through the design and

implementation of the ecosystem restoration Project; thus, full remediation awaits completion of HWRP construction activities on the HAAF parcel.

The SLC parcel was also part of the military complex in the past and has more recently been used by the Novato Police Department for target practice. Assessment and investigation of the potential contamination in the SLC parcel has yet to be performed. Potentially contaminated sites include a rifle range, a former firefighting facility, a pistol range, a night firing range, transformers, and miscellaneous USTs and ASTs. Several unexploded grenades (expected to be practice grenades) were recently found on this parcel. The State Lands property is being remediated under the Formerly Used Defense Sites (FUDS) program. All contaminants on these properties will be remediated to a condition suitable for ecosystem restoration prior to site transfer. A combination of confirmatory sampling, toxicity testing, and ecological and human health risk assessments will provide information to determine final cleanup goals in a focused feasibility study.

The HAAF and SLC parcels have been the property of the military since 1930. Prior to that time they were farmed. Pre-WWII farming did not involve the use of significant contaminants and therefore there is no reason to believe that there are any potential concerns other than those resulting from the military use of the site, which is being addressed as part of the BRAC and FUDS efforts described previously. Soil samples taken by the Army to establish background levels of heavy metals at HWRP are consistent with this analysis.

6.2 AUTHORIZATION OF HWRP

The Hamilton Wetlands Restoration Project was authorized in Section 101(b) of WRDA 1999, which specifies:

“(b) PROJECTS SUBJECT TO A FINAL REPORT. The following projects for water resources development and conservation and other purposes are authorized to be carried out by the Secretary substantially in accordance with the plans, and subject to the conditions, recommended in a final report of the Chief of Engineers if a favorable report of the Chief is completed not later than December 31, 1999: . . . (3) Hamilton Airfield, California – The project for environmental restoration, Hamilton Airfield, California, at a total cost of 55,200,000, with an estimated Federal cost of \$41,400,000 and an estimated non-Federal cost of \$13,800,000.”

The 1998 Hamilton Wetlands Restoration Project Feasibility Study was authorized by a resolution adopted by the United States Senate Committee on Environment and Public Works, dated October 29, 1997, that requested the Secretary of the Army to review the report of the Chief of Engineers on San Francisco Bay and Tributaries, California, dated December 21, 1976, and any other pertinent reports, with a view to determining whether any modification of the recommendations contained therein were advisable at that time, in the interest of ecosystem protection and restoration, including restoring tidal and

seasonal wetlands and related purposes, at the Hamilton Army Airfield and adjacent properties on San Pablo Bay, Marin County, California.

6.3 FUNDING SINCE AUTHORIZATION

The following Federal funds have been appropriated for the HWRP since it was authorized in WRDA 99:

FY 00 \$0.538 million GI
FY01 \$2.126 million CG
FY02 \$3.431 million CG

6.4 CHANGES IN SCOPE OF AUTHORIZED PROJECT

A description and rationale of the changes in benefits and costs are presented in Chapter 4, Comparison of Alternatives. A summary is presented below:

Table 6-2 Comparison of HWRP and BMKV Benefits and Costs

	HWRP (as authorized in WRDA 99)	Proposed BMK V Expansion	Combined HWRP/BMK V Project	Percent Change
Restored Habitat (acres)	950	1576	2526	166%
Dredged Material Placement Capacity (mcy)	10.6	13.8	24.4	130%
Average Annual Habitat Units	350	526	876	150%
Total Project Implementation Cost (\$ Million)	119.0*	182.7	301.7	154%

*Authorized at a cost of \$55.2 million, updated to include offloader standby costs and excess transportation costs, as well as inflation and increased utility costs (see Section 6.9.2).

6.5 CHANGES IN PROJECT PURPOSE

The authorized project purpose was environmental restoration. The recommended combined HWRP/BMK V project will include recreation as a project purpose.

6.6 CHANGES IN LOCAL COOPERATION REQUIREMENTS

Section 8.2 presents a list of local cooperation requirements. An item of local cooperation has been added to require the sponsor to provide 50 percent of all costs associated with recreation features.

6.7 CHANGE IN LOCATION OF PROJECT

There are no changes in location of the authorized project. Reauthorization to add the BMKV parcel would extend the authorized project boundaries northward to include an additional 1,610 acres. Addition of 2 acres of the 'Bulge' parcel would extend the authorized project boundary to the southwest.

6.8 DESIGN CHANGES

The expansion of the HWRP to include the BMK V parcel would result in minor changes to the authorized HWRP and would not be a separable expansion project. The changes associated with the preferred alternative for BMK V expansion would include:

- 1) replacing the barrier levee between the HWRP site and the BMKV parcel with an access berm for the NSD outfall,
- 2) elimination of the levee between the SLC parcel and the BMKV parcel,
- 3) change in location and increase in high transitional marsh on the SLC parcel, and
- 4) repositioning of the SLC parcel levee breach, to restore tidal flow, onto the BMK V parcel,
- 5) addition of an access area for approved recreation features, and
- 6) potential use of diesel off-loading and booster pumps for off-loading dredged material.

These changes assume that the authorized HWRP site will be available for construction prior to initiation of construction of the BMK V expansion parcel. The project design is presented in Chapter 5 of this report.

6.9 CHANGES IN TOTAL PROJECT FIRST COSTS

Appendix A provides a detailed discussion of changes in total project first costs. A summary of the changes is provided below.

6.9.1 LTMS and HWRP Costs

The relationship between LTMS costs and HWRP project costs is described below.

The members of the Long Term Management Strategy (LTMS) Executive Committee signed and approved the Final LTMS Management Plan in January 2002. The members of the Executive Committee include the Corps of Engineers, the Environmental Protection Agency, the San Francisco Bay Regional Water Quality Control Board, the San Francisco Bay Conservation and Development Commission, and the State Water Resources Control Board. The Final LTMS Management Plan reduces the allowable in-bay disposal volumes of dredged material by more than 50% compared to pre-LTMS volumes. Implementation of LTMS will require that much of the dredged material that

has historically been placed in the bay be placed in upland sites or in the ocean. Other than the small volume that the smaller navigation projects will continue to be allowed to dispose of in-Bay, dredged material disposal will be evenly allocated between upland and ocean sites, and full allocation to upland or ocean disposal will be phased in over 12 years.

Presently, the LTMS Implementation Plan is not mandating any upland disposal, but has designated ocean disposal for some navigation projects and will be designating disposal at the San Francisco Deep Ocean Disposal Site (SFDODS) for other projects as the implementation transition period proceeds. Thus, implementation of LTMS will have no immediate impact on the disposal costs of those projects presently disposing at the ocean site. However, since in-bay disposal is the least costly alternative, implementation of LTMS will increase the cost of navigation improvements and associated maintenance for the projects currently using in-bay disposal sites that will instead place dredged material upland or at the ocean site under the LTMS Implementation Plan. The magnitude of the post-LTMS cost increase will vary from project to project, and will depend on the location of the present disposal site and whether the new disposal destination is upland or in the ocean. Upland sites must be developed to accommodate the new disposal strategy, and the cost to develop these sites for Federal projects will be funded, at least in part, by the Corps' navigation construction and O&M programs.

Authorized HWRP Incremental Costs

The HWRP was authorized in WRDA 1999 at a cost of \$55.2 million. Project features included preconstruction engineering and design (PED), site preparation, and material offload and placement costs for 10.6 million cubic yards (mcy) of material to be placed at the HWRP site.

Table 6-3 Authorized HWRP Costs (\$ million)

1998 Hamilton Project Cost (excluding Bel Marin Keys expansion)	
	HWRP WRDA '99 Cost (1998 \$)
Lands, Easements and Rights of Way	0.3
Relocations	2.1
PED & Construction Mgmt	4.1
Site Preparation	20.8
Navigation Ports & Harbors	27.8
Total	55.2

1/ The Project Cooperation Agreement (PCA) defines the 902 Limit as \$72.4 million.

As described above, implementation of LTMS will have no immediate impact on disposal costs for those navigation projects presently disposing at the ocean site. However, those navigation projects currently disposing at in-bay sites for which disposal designations will change under LTMS implementation will have to either pay higher transportation costs to take material to the ocean or additional costs to place material in upland sites. The HWRP

was authorized to fund the “incremental cost of transportation and disposal of dredged material.” This Hamilton incremental cost is defined, in paragraph 6 of the Chief’s Report, as the value by which the costs of transportation and disposal of dredged material to the HWRP exceed the costs of transportation and disposal at the least-cost environmentally acceptable disposal alternative. This authority effectively allows the HWRP to share the LTMS incremental cost with the navigation projects. Refer to Appendix A for further explanation of incremental costs.

More navigation projects will be shifted from in-bay to ocean disposal as LTMS implementation is gradually phased in. Those projects must assume the additional costs associated with LTMS implementation, regardless of whether the HWRP is an available disposal option or not. For example, the Oakland Harbor maintenance project and the Richmond Harbor maintenance project must now pay the costs of SFDODS disposal as their least-cost environmentally acceptable disposal option. The fact that the HWRP presents a beneficial reuse opportunity at no extra premium provides those projects the incentive to choose to place material at Hamilton in lieu of offshore disposal. The costs of SFDODS disposal, for the Oakland and Richmond maintenance projects, constitute a minimum fixed cost, from this point forward.

6.9.2 Post-WRDA HWRP Implementation Cost Adjustments

In anticipation of the reauthorization of the HWRP to add the BMK V parcel, the design team has revised the original WRDA 1999 project cost for HWRP to reflect the cost increases associated with inflation, utility relocations, offloader standby costs, and excess transportation costs.

PED and Site Preparation

PED (including construction management) costs were adjusted from 1998\$ to 2002\$ as shown below. These costs were adjusted to account for the lengthy construction period, required overtime and changed labor rates. Costs were added to PED for value engineering studies. Site preparation costs were adjusted to reflect current conditions and adjusted for inflation.

Table 6-4 PED ^{1/} Costs (\$million)

1998\$	Inflated to 2002\$
4.1	16.3

^{1/} includes construction management costs

Table 6-5 Site Preparation Costs (\$ million)

	1998\$	Inflated to 2002 \$
Site Prep	19.3	19.6
Adaptive Management	1.5	2.8

Utility Relocation Costs

The HWRP feasibility study assumed that the existing Novato Sanitary District outfall could be protected during construction by slip-lining the pipeline and leaving it in place during construction. However, PED investigations have indicated that a much longer portion of the pipeline would require slip-lining, thus increasing the costs beyond the point of being cost-effective. It was concluded that the most cost-effective method to protect the existing outfall pipeline would be to replace it in-kind with an adjacent plastic (HDPE) pipeline. The utility relocation cost increased as a result of this analysis.

Table 6-6 Utility Relocation Costs (\$ million)

1998\$	Increased Utility Costs	Adjusted Cost 2002\$
2.1	+10.5	12.6

Offload/Placement Costs

The WRDA 1999 HWRP costs included a line item for “Navigation Ports and Harbors” that accounted for offload and placement costs and that was based on an average cost of \$2.62/cy. For clarity, this line item has been broken out into offload/placement costs and excess transportation costs.

The offload/placement costs were computed for the combined HWRP/BMK V project and then the HWRP and BMK V proportionate shares of these costs were calculated based on the volume of material that would be required for the HWRP and for the BMK V addition. Appendix A presents the data that were used to compute the offloader mobilization/demobilization and operational costs. Columns “K” and “L” of Table A-1 of Appendix A display the unit costs associated with these activities. These unit costs were multiplied by the volume of material to be delivered to the combined HWRP/BMK V project to compute the total offloader operating and mobilization/demobilization cost, shown in column “O”. This cost was then added to the following offloader construction and standby costs to compute the total offload cost for the combined project.

Table 6-7 Total Offload Costs for the Combined HWRP/BMK V Project	
offload operating and mob/demob (Table A-1 column “O”)	\$ 71.0
offloader platform/pipeline/electrification	\$ 6.6
offloader equipment standby	\$ 17.8
offloader labor standby	\$ 21.5
Subtotal	\$ 116.9
contingency	\$ 13.2
Total	\$ 130.1

Note: The Hamilton feasibility study assumed that the offloader mechanism would operate continuously throughout the construction period. However, the revised design assumes that the offloader will be in a standby mode for approximately 15 to 20% of the

project construction period. Offloader equipment and operators must be paid during this standby time. These standby costs were not accounted for in the original feasibility cost estimate.

Table 6-8 Offload/Placement Costs (\$ million)

1998\$	2002 \$ Adjusted Cost
27.8	54.4

Excess Transportation Cost

As discussed in greater detail in the sub-section entitled “Excess Transportation Costs Associated with the Shift from In-Bay to HWRP Disposal,” contained in section 6.9.1 of Appendix A, Federal and non-Federal navigation projects that presently dispose of dredged material at in-Bay sites would incur additional transportation costs to dredge and transport material to Hamilton instead of to their designated in-Bay sites. In each of these cases, the HWRP will fund this “excess transportation cost” of hauling the material to Hamilton. The excess transportation cost has been computed based on the volume of material expected to be delivered from each of the applicable navigation projects over the life of the HWRP. As many of the remaining individual in-bay projects shift from to SFDODS disposal during implementation of LTMS, the excess transportation cost will be eliminated, and the projects will instead pay to the HWRP the transportation cost differential as described in the sub-section entitled “Differential Costs Associated with the Shift from Ocean to HWRP Disposal,” contained in section 6.9.1 of Appendix A.

The LTMS Implementation Plan requires that in-bay disposal gradually shift to ocean or upland disposal over a 12-year period. Because the LTMS navigation project-by-project schedule has not yet been developed for those projects still disposing of dredged material in-Bay, assumptions were made regarding projected LTMS implementation for the purposes of computing excess transportation costs for the HWRP. Refer to Appendix A for a more detailed discussion of these assumptions.

The adjustments to the HWRP costs define the total HWRP implementation costs if the HWRP were to be constructed without the BMK V expansion. These costs are shown below:

Table 6-9 Adjusted Total HWRP Implementation Costs (\$million)

	Total Project Cost (1998\$)	Adjusted Total Project Implementation Cost (2002\$)
Lands and Damages	0.3	0.4
Relocations	2.1	12.6
PED/Construction Management	4.1	16.3
Site Prep	19.3	19.6
Navigation Ports & Harbors	27.8	n/a
Offload/Placement	n/a	54.4
Excess Transportation Costs	n/a	12.9
Adaptive Management	1.5	2.8
Total	55.2	119.0

6.9.3 Oakland Deepening Project Contribution to HWRP Implementation Costs

The HWRP and the Oakland –50 Foot Deepening Project were both authorized in WRDA 1999. WRDA 1999 authorized both projects to place Oakland dredged material at the HWRP. The HWRP was authorized to share site preparation and offload/placement costs with navigation projects using the site, by accepting funding contributions from the Oakland Deepening Project, among others. The Oakland Harbor Navigation Improvement (-50-Foot) Project Cooperation Agreement (PCA), which was signed in July of 2001, requires the Oakland Project to contribute 100% of the PED, site preparation, and offload/placement costs associated with placing that volume of material dredged from the Deepening Project and delivered to the HWRP, which the Oakland Project authorization estimated at 2.5 mcy. This requirement does not apply to Oakland maintenance material.

The Oakland Deepening Project is generally assigned the funding responsibility for approximately 25% of the costs of beneficial use at the HWRP; of this proportion, the Oakland PCA estimates that the Oakland Project's share of the Hamilton site preparation costs (not including Hamilton's offload and placement costs) will be \$5.2 million. The Oakland contributions are based on the following assumptions:

- a. The Oakland Project will deliver all 2.5 mcy to HWRP.
- b. The Oakland Project's share of costs is computed based on its proportional contribution to total cubic yardage delivered to the HWRP site (2.5 mcy/10.6 mcy = 23.58%).
- c. The Oakland Project is expected to contribute 23.58% of the estimated total volume of dredged material to be placed on the HWRP site. A 23.58% fraction of the site preparation, PED and construction management, relocations, lands and damages, and offload/placement costs has been calculated for attribution to the Oakland Project. The Oakland Project is not responsible for paying any portion of excess transportation costs associated with other navigation projects.

Based on the adjusted total HWRP implementation costs, the Oakland Deepening Project will contribute approximately \$25 million toward the HWRP costs, leaving the remaining \$94 million to be funded by the HWRP and other navigation projects using the site.

Table 6-10 Oakland Deepening Project Contribution to HWRP Total Project Implementation Cost (\$million)

	Adjusted Total HWRP Implementation Cost (2002\$)	Oakland Deepening Project Contribution (2002\$)
LERs	0.4	0.1
Relocations	12.6	3.0
PED & Construction Costs	16.3	3.8
Site Prep	19.6	4.6
Offload/Placement	54.4	12.8
Excess Transportation Costs	12.9	N/A
Adaptive Management	2.8	0.7
Total	119.0	25.0

6.9.4 Total Implementation Costs for Combined HWRP and BMK V Project

The following table displays the estimated total project implementation costs for the combined HWRP/BMK V project. The figures for the BMK V portion are presented in Chapter 5 of this report.

Table 6-11 Total Project Implementation Costs (\$million) (2002\$)

	HWRP	BMK V	Combined Project
LERs	0.4	19.4	19.8
Relocations	12.6	0.3	12.9
PED & Construct. Mgmt	16.3	22.4	38.7
Site Prep	19.6	40.4	60.0
Offload/Placement	54.4	79.6	134.0
Excess Transport. Cost	12.9	16.7	29.6
Recreation	0.0	0.2	0.2
Adaptive Management	2.8	3.7	6.5
Total	119.0	182.7	301.7

6.9.5 Other Navigation Project Contributions to HWRP/BMK V Combined Project Implementation Costs

The total project implementation costs for the Combined HWRP/BMK V Project will be funded through the HWRP/BMK V Project, the Oakland Deepening Project, and the other navigation projects using the project site. The Oakland Deepening Project's contribution is estimated to be \$25 million, as detailed above.

Those other Federal and non-Federal navigation projects designated under the LTMS Implementation Plan to dispose of dredged material at SFDODS will contribute funding

to the HWRP. The funding contribution will be calculated as a cost differential: the difference between the estimated costs of dredging, transportation to and disposal at SFDODS, and the actual costs of dredging and transportation to Hamilton. The schedule of material to be delivered to the site from other navigation projects is provided in Table 2 of Appendix A. These quantities were used to compute the funding contribution to the HWRP from navigation projects presently disposing of dredged material at SFDODS.

The total project implementation cost for the combined project is the cost to design and construct the project, including dredged material transportation costs that exceed current dredged material hauling costs as described in this chapter. Total project implementation costs will be shared by the non-Federal sponsor, navigation projects in the San Francisco Bay (both Federal and non-Federal), and the Federal Construction General program. See Appendix A for a more detailed explanation of total project implementation costs and total first project costs.

The total project implementation cost for the combined Hamilton Wetland Restoration Project and Bel Marin Keys Expansion project is estimated to be \$301,700,000 to be funded as follows: non-Federal sponsor: \$47,100,000, Federal and non-Federal navigation projects: \$113,400,000, and Federal Construction General funds: \$141,200,000.

The navigation projects' contributions must be subtracted from the total project implementation cost to determine the total project first cost. As is more fully discussed in Appendix A, this is necessary to avoid redundant Federal appropriations covering identical components of both the HWRP and other Federal navigation projects, and to account for contributions to the HWRP's total project implementation costs derived from non-Federal navigation projects providing funding to the HWRP as determined by those projects' transportation costs differential. The total project first cost defines the Congressionally authorized project cost.

The total first project cost for the combined project is \$188,300,000 under fourth quarter 2002 prices; this figure will form the basis of cost-sharing. The Federal share is currently estimated at \$141,200,000. The non-Federal share is currently estimated to be \$47,100,000.

Table 6-12 Total Project First Costs (\$million)

Total Project Implementation Cost for Combined Project	Oakland Project's Contribution	Other Navigation Project Contributions	Total Project First Cost
\$301.7 million	\$25.0 million	\$88.4 million	\$188.3 million

6.9.6 Changes to Total Project First Costs for Combined HWRP and BMK V Project

The following table displays the estimated costs for the combined HWRP/BMK V project, the HWRP project as authorized by WRDA 1999, the authorized project updated to current price levels, and the project last recommended to Congress.

Table 6-13 Changes in Total Project First Costs (\$million)

Recommended Project Costs (2002 \$)	Authorized (WRDA 99) (1998 \$)	Updated Authorized Costs (2002 \$)	Costs Last Presented to Congress (2001\$)
\$188.3	\$55.2	\$119.0 <u>1/</u>	\$63.2

1/ The updated authorized costs presented here are the HWRP adjusted project implementation costs.

6.10 CHANGES IN PROJECT BENEFITS

Refer to Section 6.4 above for a summary of changes in project benefits.

6.11 BENEFIT-COST RATIO

There is no benefit-to-cost ratio for this project since it is an environmental restoration project.

6.12 CHANGES IN COST ALLOCATION

The table below shows the allocation of costs between the two project purposes for the authorized project and the recommended project. These costs reflect total first project costs, as defined for cost-sharing purposes, rather than total project implementation costs.

Table 6-14 Changes in Cost Allocation (2002\$, \$million)

Project	Restoration	Recreation	Total Cost	% Allocated per Purpose
HWRP (WRDA 99)	55.2	0	55.2	100% Restoration
Combined HWRP/BMK V	188.1	0.2	188.3	99.9% Rest./0.1% Recr.

6.13 CHANGES IN COST APPORTIONMENT

The following table shows the Federal and non-Federal share of the total first costs for the recommended combined project at current price levels.

Table 6-15 Combined Total First Project Costs (2002\$, \$million)

FIRST COST	FEDERAL	NON-FEDERAL	TOTAL
Subtotal Restoration	141.1	47.0	188.1
Recreation	0.1	0.1	0.2
Total	141.2	47.1	188.3

6.14 ENVIRONMENTAL CONSIDERATIONS IN RECOMMENDED CHANGES

A Supplemental EIR/S has been prepared and is attached to this report. All environmental effects are presented in that analysis.

6.15 PUBLIC INVOLVEMENT

See Chapter 7 for a discussion of the public involvement process for the BMKV expansion study.

6.16 HISTORY OF PROJECT

The HWRP was authorized for construction in WRDA 1999. The PED phase is underway for the HWRP. The PCA was signed by the Army and the California Coastal Conservancy on 22 April 2002. Construction of a \$1.2 million portion of the dredged material delivery pipeline was completed in February 2002 as part of the Oakland Project's site development requirements under the terms of the Oakland Project PCA.